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1967

# NORANDA

MINES LIMITED

45TH ANNUAL REPORT

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**ANNUAL MEETING** April 26th, 1968, 2:30 p.m., King Edward Sheraton Hotel, Toronto

## FINANCIAL SUMMARY

Thousands

| | **1967** | 1966 | 1965 | 1964 | 1963 |
|---|---|---|---|---|---|
| Operating revenue | **$354,729** | $276,337 | $221,104 | $187,823 | $172,552 |
| Dividends and interest earned | **19,702** | 14,124 | 12,750 | 11,184 | 8,824 |
| Depreciation | **12,282** | 11,201 | 10,798 | 10,859 | 10,650 |
| Taxes | **26,300** | 22,860 | 18,256 | 16,515 | 12,402 |
| Net income | **45,588** | 43,420 | 36,209 | 32,357 | 25,978 |
| Working capital | **74,779** | 62,279 | 60,516 | 56,266 | 54,969 |
| Capital expenditures | **38,994** | 36,387 | 17,267 | 16,071 | 13,722 |
| Total advances | **5,842** | 5,153 | 4,569 | 3,249 | 1,386 |
| Total long-term investments | **139,497** | 84,466 | 86,837 | 84,691 | 72,618 |
| Long-term debt | **85,239** | 9,359 | 10,497 | 12,141 | 14,038 |

English and French editions of this report may be obtained from the head office of the Company at 44 King Street West, Toronto, Ontario.

On peut se procurer des copies additionnelles de ce rapport, en anglais ou en français, en s'adressant au bureau-chef de la compagnie, au 44 ouest, rue King, Toronto, Ontario.

## DIRECTORS

| | | |
|---|---|---|
| John R. Bradfield * | Chairman, Noranda Mines Limited | Toronto |
| A. O. Dufresne | Retired Deputy Minister of Mines, Quebec | Quebec |
| Hon. George B. Foster * | Senior Partner — Foster, Watt, Leggat, Colby, Rioux & Malcolm | Montreal |
| L. G. Lumbers | President, Noranda Manufacturing Ltd. | Toronto |
| André Monast | Partner — St. Laurent, Monast, Desmeules & Walters | Quebec |
| R. V. Porritt * | President, Noranda Mines Limited | Toronto |
| A. Powis * | Executive Vice-President, Noranda Mines Limited | Toronto |
| Hon. Jean Raymond | Chairman, Alphonse Raymond Ltée. | Montreal |
| W. S. Row * | Executive Vice-President, Noranda Mines Limited | Toronto |
| J. D. Simpson | Chairman, Placer Development Limited | Vancouver |
| Leo H. Timmins | President, Timmines Limited | Montreal |
| W. P. Wilder * | President, Wood Gundy Securities Limited | Toronto |

* Members of Executive Committee

## OFFICERS

| | |
|---|---|
| John R. Bradfield | Chairman of the Board and Chief Executive Officer |
| R. V. Porritt | President |
| W. S. Row | Executive Vice-President |
| A. Powis | Executive Vice-President |
| E. K. Cork | Vice-President — Treasurer |
| R. G. Driver | Vice-President |
| Hon. George B. Foster | Vice-President |
| L. G. Lumbers | Vice-President |
| R. P. Riggin | Vice-President — Corporate Relations |
| D. E. G. Schmitt | Vice-President — Mines |
| A. H. Zimmerman | Vice-President — Comptroller |
| J. O. Hinds | Assistant to the President |
| R. C. Ashenhurst | Secretary |

## TRANSFER AGENT AND REGISTRAR

Canada Permanent Trust Company
Toronto, Vancouver, Calgary, Saskatoon, Winnipeg, Montreal, Saint John, N.B., Halifax, Charlottetown and St. John's, Nfld.

The Chase Manhattan Bank
New York, N.Y.

**GENERAL COUNSEL** Holden, Murdoch, Walton, Finlay, Robinson, Pepall & Harvey

# DIRECTORS' REPORT TO THE SHAREHOLDERS

### Earnings and Dividends

Earnings of $46 million, equivalent to $3.82 per share, established a new record for the ninth consecutive year.

| Earnings per share | 1967 | 1966 |
|---|---|---|
| From operations | $ 2.01 | $ 2.49 |
| From investments | 1.81 | 1.15 |
| | $ 3.82 | $ 3.64 |
| Share of undistributed earnings of unconsolidated subsidiaries | $ .36 | $ .39 |

The dividend rate was 45¢ per share for the first three quarters, and 50¢ per share for the last quarter.

The effect of improved investment income, higher copper prices, and more custom material treated, was offset by reduced copper production and by Noranda's $6.3 million share of the loss, including write-offs of pre-operating expense and depreciation, of Northwood Pulp, together with a total loss of $2.8 million in the zinc die-casting companies. In each case, part of the loss is of non-recurring nature. While Northwood Pulp's start-up difficulties have been largely overcome, there is a continuing glut in the market for pulp.

### Major Developments

There were four major developments during the year. In June, the shareholders of Brunswick Mining and Smelting Corporation Limited ratified an Agreement under which Noranda and subsidiaries provided $50 million of needed capital in return for securities convertible for ten years into 51% of the capital stock. Brunswick has a large lead-zinc-silver mining operation inland from Bathurst, N.B., and a newly constructed smelter and sulphuric acid plant on tidewater, west of Bathurst. Since June, Brunswick has been under the management of Noranda.

Noranda is committed to purchase $27.5 million of income debentures of Brenda Mines which, together with $32.5 million of senior capital from other sources, is the estimated cost to bring Brenda's large low-grade copper-molybdenum orebody near Penticton, B.C., to production at 24,000 tons per day. With the common shares attached to the income debentures, as well as shares purchased for cash, Noranda will hold almost 50% of Brenda's common stock and will have the responsibility of management. Engineering and site work are proceeding with production projected for late 1969.

Late in the year, a wholly-owned U.S. subsidiary, Noranda Inc., acquired a 96% interest in The Pacific Coast Company for $26 million U.S. Manufacturing aluminum building products at its main plant near Cleveland, Ohio, and marketing through a network of 96 branches in the Eastern and Central United States, Pacific Coast has a growing and profitable business. In its fiscal year ended August 31, 1967, the company earned $2 million U.S. on sales of $32 million.

The substantial and increasing consumption of aluminum metal by Pacific Coast was an important factor in the recently-announced plan to build an aluminum reduction plant at New Madrid, Missouri, with initial annual capacity of 60-70,000 tons. First production is planned for 1970. The cost of the plant, estimated at about $60 million, will be financed by Industrial Revenue Bonds of the Municipality. These two developments in aluminum were the outcome of a long and intensive study of the industry.

On February 9, 1968, Kerr Addison Mines announced it would offer treasury shares in exchange for the assets of Quemont and Normetal. If the transactions are consummated, Kerr Addison will have three operating mines, as well as the Agnew Lake uranium prospect, and will have cash and investments at December 31 market values totalling some $80 million. Noranda has a substantial interest in all three companies, and would have a beneficial interest of nearly 43% in Kerr Addison following the transactions.

**Financial Condition**

Major new investments by Noranda and consolidated subsidiaries totalled $79 million and by unconsolidated subsidiaries, a further $9.5 million. Capital expenditures were $39 million, largely for manufacturing facilities and the Central Canada Potash project. In addition, unconsolidated subsidiaries spent $8 million on capital account. The initial capacity of the potash project has been increased to 1,500,000 tons of product per year. The plant is scheduled to commence production late in 1969 and reach full capacity in 1972. The sale of all of this production has been arranged at prices prevailing at time of delivery.

Offsetting these outlays were net cash flow from operations of $41 million, increased long-term debt of $64 million and a $26 million profit on the sale of shares of Denison Mines (which was not included in earnings for the year). As a result, working capital increased by $12.5 million to $75 million.

Your directors regard the total indebtedness as quite reasonable, compared to net worth and cash flow. It might be noted that the shareholders' equity, shown at $270 million in 1967, would have been $511 million if all those investments having a market quotation had been valued at current prices. Readily marketable securities included in current assets are currently worth $38 million.

While concern has been expressed in regard to the future of Quebec, it is believed there is reason for optimism that the Province will remain a satisfactory place to work and do business. Noranda is continuing to be a good corporate citizen of the Province, providing full opportunity for residents to achieve positions of responsibility with the Company. Including present commitments, approximately 25% of the net book value of Noranda's assets are in Quebec and your directors retain full confidence in the future of these investments.

On behalf of the Board:

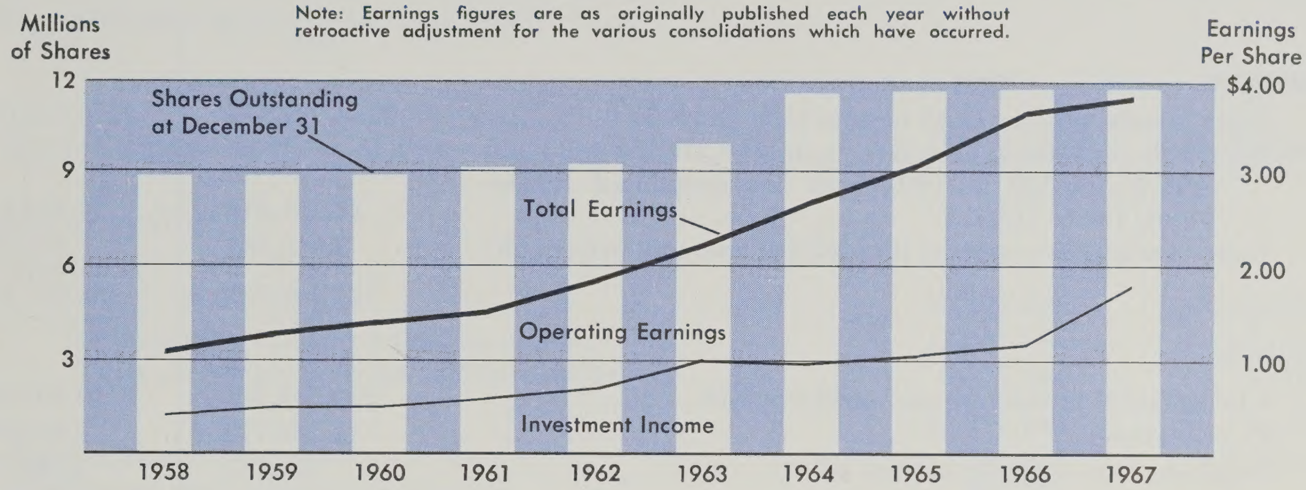
John R Bradfield
Chairman

R V Porritt
President

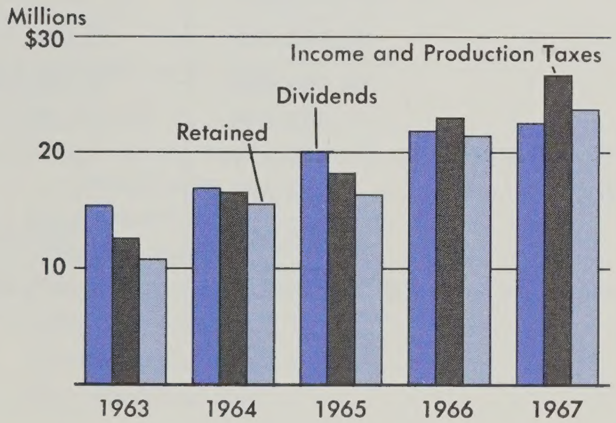
Toronto, Ontario, February 20, 1968

## EARNINGS PER SHARE

Note: Earnings figures are as originally published each year without retroactive adjustment for the various consolidations which have occurred.

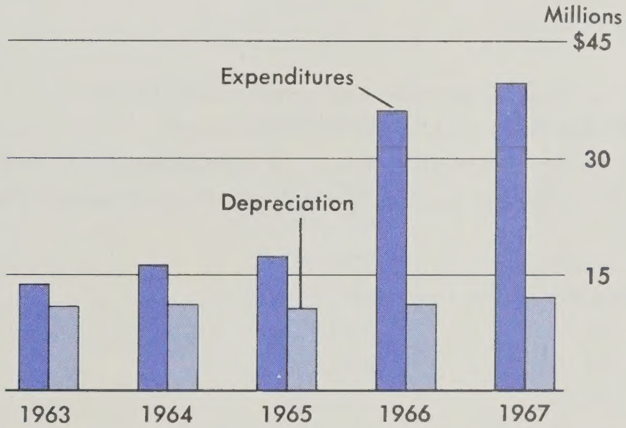



## DISTRIBUTION OF PROFIT

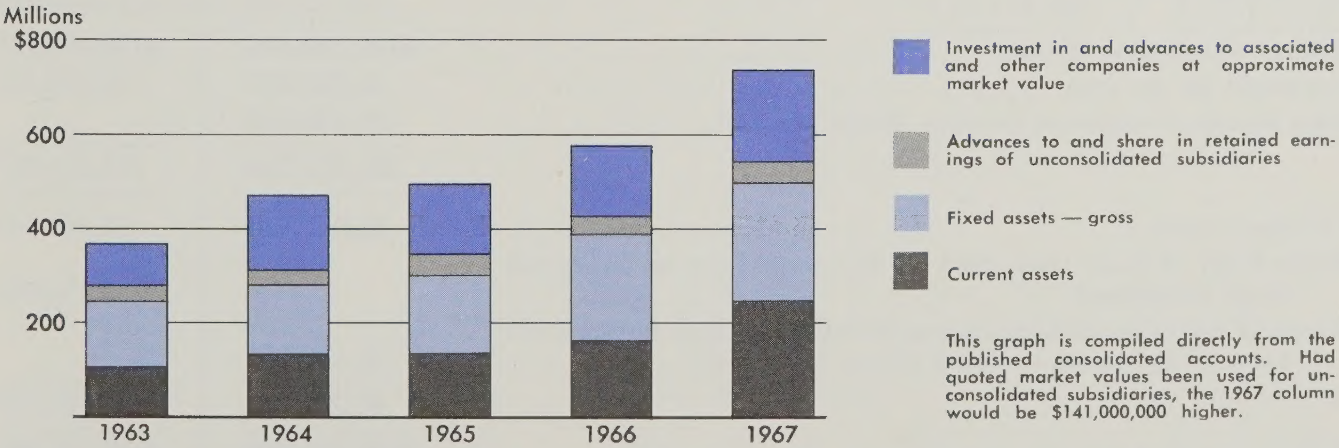



## CAPITAL EXPENDITURES AND DEPRECIATION

(Includes pre-production expenditures and write-offs)




## STRUCTURE OF ASSETS




This graph is compiled directly from the published consolidated accounts. Had quoted market values been used for unconsolidated subsidiaries, the 1967 column would be $141,000,000 higher.

## CONSOLIDATED STATEMENT OF OPERATIONS
### FOR THE YEAR ENDED DECEMBER 31, 1967
(with comparative figures for the year 1966)

| | 1967 | 1966 |
|---|---|---|
| **Revenue:** | | |
| From metals, products and custom tolls (Note 5) | $354,729,074 | $276,336,672 |
| Dividends and interest earned (including $7,170,263 dividends and $1,448,449 interest, from unconsolidated subsidiaries) [Note 1(d)] | 19,701,816 | 14,123,736 |
| Gain on sale of investments (in 1967 less amounts written off) | 2,976,832 | 497,439 |
| | 377,407,722 | 290,957,847 |
| **Expense:** | | |
| Cost of metal production and products sold | 260,549,366 | 192,802,068 |
| Depreciation | 11,522,720 | 9,857,386 |
| Preproduction expenses written off | 758,878 | 1,343,272 |
| Administration, selling and general expenses | 17,097,614 | 12,527,342 |
| Municipal and sundry taxes | 2,889,993 | 2,310,995 |
| Interest on long-term debt | 1,916,985 | 600,413 |
| | 294,735,556 | 219,441,476 |
| | 82,672,166 | 71,516,371 |
| Provided for income and production taxes | 26,300,000 | 22,860,000 |
| Exploration and research written off | 4,488,528 | 5,523,137 |
| Minority interest in losses of subsidiaries | (28,373) | (287,212) |
| Provision for loss of Northwood Pulp Limited [Note 2(b)] | 6,323,800 | |
| | 37,083,955 | 28,095,925 |
| Net profit for the year | $ 45,588,211 | $ 43,420,446 |

## CONSOLIDATED STATEMENT OF RETAINED EARNINGS

| | 1967 | 1966 |
|---|---|---|
| Balance—beginning of year | $169,780,096 | $150,496,183 |
| Net profit for the year | 45,588,211 | 43,420,446 |
| Gain on sale of shares of Denison Mines Limited | 26,149,428 | |
| | 241,517,735 | 193,916,629 |
| Dividends paid | 22,081,528 | 21,960,677 |
| Write-down of costs since 1963 on Kennedy Lake underground mine, abandoned | | 2,175,856 |
| Excess of cost of investments in consolidated subsidiaries over book value of net assets acquired [Notes 1(b), 1(c)] | 21,471,858 | |
| | 43,553,386 | 24,136,533 |
| Balance—end of year | $197,964,349 | $169,780,096 |

# CONSOLIDATED STATEMENT OF SOURCE AND APPLICATION OF FUNDS

## FOR THE YEAR ENDED DECEMBER 31, 1967

(with comparative figures for the year 1966)

| | 1967 | 1966 |
|---|---|---|
| Working Capital, beginning of year | $ 62,279,000 | $ 60,516,000 |
| **Source of Funds:** | | |
| Operations— | | |
| Net profit for the year | 45,588,000 | 43,420,000 |
| Depreciation and preproduction charges | 12,282,000 | 11,201,000 |
| Taxes on income deferred to future periods | 5,508,000 | 4,756,000 |
| | 63,378,000 | 59,377,000 |
| Issue of shares | 288,000 | 4,652,000 |
| Fixed asset disposals and adjustments | 298,000 | 354,000 |
| Increase in deferred liabilities and holdbacks payable | 1,873,000 | 108,000 |
| Long-term debt | 63,711,000 | (1,138,000) |
| Gain on sale of shares of Denison Mines Limited | 26,149,000 | |
| | 155,697,000 | 63,353,000 |
| **Application of Funds:** | | |
| Dividends | 22,082,000 | 21,961,000 |
| Fixed asset and deferred preproduction and exploration expenditures | 38,994,000 | 36,387,000 |
| Investments (net) | 55,031,000 | (2,371,000) |
| Minority interest | 2,183,000 | (1,228,000) |
| Non-current assets (net) of acquired subsidiaries | 23,029,000 | 4,887,000 |
| Advances (net) | 689,000 | 583,000 |
| Special refundable tax | 482,000 | 1,136,000 |
| Miscellaneous (net) | 707,000 | 235,000 |
| | 143,197,000 | 61,590,000 |
| Net Increase | 12,500,000 | 1,763,000 |
| Working Capital, end of year | $ 74,779,000 | $ 62,279,000 |

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## CONSOLIDATED BALANC

(with comparative fig

### ASSETS

| | 1967 | 1966 |
|---|---|---|
| **Current Assets:** | | |
| Cash and short-term notes | $ 15,448,668 | $ 7,128,923 |
| Marketable investments, at cost less amounts written off (quoted market value $38,339,257) | 19,153,655 | 26,852,193 |
| Accounts, advances and tolls receivable ($1,137,524 due from unconsolidated subsidiaries) | 74,610,225 | 58,526,582 |
| Inventories of metals and products—metals at estimated realizable value, other inventories at the lower of cost or market | 99,072,538 | 49,394,914 |
| | 208,285,086 | 141,902,612 |
| **Deferred and Prepaid Items:** | | |
| Stores, at cost | 5,297,259 | 5,891,411 |
| Mortgage loans on townsite properties | 225,751 | 311,615 |
| Miscellaneous | 4,995,364 | 2,891,903 |
| Government of Canada special refundable tax | 1,617,959 | 1,135,947 |
| | 12,136,333 | 10,230,876 |
| **Fixed Assets:** | | |
| Mining properties, at cost | 1,676,313 | 1,676,313 |
| Potash permits, at cost | 7,275,000 | 7,275,000 |
| | 8,951,313 | 8,951,313 |
| Land, buildings and equipment, at cost | 224,423,447 | 182,226,734 |
| Accumulated depreciation | 120,738,639 | 106,533,028 |
| | 103,684,808 | 75,693,706 |
| **Investments**, at cost less amounts written off: | | |
| Unconsolidated subsidiaries (Note 1) | 62,501,272 | 12,238,230 |
| Associated and other companies (Note 2) | 76,995,559 | 72,227,710 |
| | 139,496,831 | 84,465,940 |
| **Advances:** | | |
| Unconsolidated subsidiaries | 3,286,638 | 725,172 |
| Associated and other companies | 2,555,411 | 4,427,816 |
| | 5,842,049 | 5,152,988 |
| **Deferred Preproduction and Exploration Expenditures** (including Potash Project of $31,273,745 in 1967 and $14,570,508 in 1966) | 35,128,630 | 18,092,466 |
| **Goodwill Arising on Consolidation** [Note 1(c)] | | 4,548,669 |
| | $513,525,050 | $349,038,570 |

# ES LIMITED
aws of Ontario)
D SUBSIDIARIES

## IEET — DECEMBER 31, 1967
ecember 31, 1966)

### LIABILITIES

| | 1967 | 1966 |
|---|---|---|
| **Current Liabilities:** | | |
| Bank advances | $ 14,639,118 | $ 9,908,731 |
| Accounts payable ($4,928,575 due to unconsolidated subsidiaries) | 100,602,210 | 57,461,657 |
| Taxes payable | 12,063,173 | 11,922,083 |
| Current portion of long-term debt | 6,201,504 | 331,367 |
| | 133,506,005 | 79,623,838 |
| **Deferred Liabilities and Holdbacks Payable** | 3,191,297 | 1,318,000 |
| **Taxes on Income Deferred to Future Periods** | 20,074,964 | 14,224,230 |
| **Long-Term Debt** (Note 3) | 85,239,336 | 9,358,576 |
| **Minority Interests in Consolidated Subsidiaries** | 1,641,047 | 3,114,030 |
| **Shareholders' Equity:** | | |
| Capital stock (Note 4)— | | |
| Authorized: 15,000,000 share of no par value | | |
| Issued: 11,939,549 shares | 66,864,679 | 66,576,427 |
| Contributed surplus | 5,043,373 | 5,043,373 |
| Retained earnings | 197,964,349 | 169,780,096 |
| | 269,872,401 | 241,399,896 |
| | $513,525,050 | $349,038,570 |

On behalf of the Board:

JOHN R. BRADFIELD, Director

R. V. PORRITT, Director

# NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
## FOR THE YEAR ENDED DECEMBER 31, 1967

1. (a) The accompanying consolidated financial statements include the accounts of Noranda Mines Limited and the following operating subsidiaries (including the accounts of their subsidiaries) whose financial statements are not published:

| | |
|---|---|
| Brynnor Mines | Noranda Manufacturing |
| Canada Wire and Cable | Noranda Sales Corporation |
| Canadian Copper Refiners | Norcast Manufacturing |
| Coulter Manufacturing | Northwood Mills |
| Noranda Copper Mills | The Pacific Coast Company |
| Noranda Inc. | Quebec Iron Foundries |

In respect of all other significant operating subsidiaries summarized financial information is provided to the shareholders in the Annual Report of Noranda Mines Limited.

(b) Effective September 1, 1967 Noranda Inc., a newly incorporated subsidiary, acquired control of The Pacific Coast Company. That subsidiary's results for the three months ended November 30 have been included in the accompanying consolidated statement of operations. The $17,445,375 excess of the cost of the shares of the company over its underlying net asset values at September 1, 1967 has been written off against 1967 consolidated retained earnings.

(c) Goodwill arising on consolidation at December 31, 1966 of $4,548,669 represented the excess of the consideration paid for the Wolverine Die Cast group of companies over their underlying net tangible assets at the date of acquisition. It has been Noranda's practice to write off such excess values to consolidated retained earnings. Although in this instance it was the intention to amortize the amount over a period of years as an asset, since certain short-term tax advantages were expected to accrue from the acquisition, it now appears that these advantages will not be realized and it has been decided to revert to the company's normal practice.

(d) Noranda's share of the aggregate profits less losses of its unconsolidated subsidiaries for their 1967 fiscal periods amounted to $11,516,247 compared with dividends of $7,170,263 received from such subsidiaries and included in the consolidated statement of operations for the year. Noranda's share of the accumulated undistributed profits less losses of its unconsolidated subsidiaries of $39,782,159 has not been taken up in the consolidated accounts.

(e) During 1967, Noranda and its consolidated subsidiaries acquired $40,000,000 6½% first mortgage convertible income bonds maturing April 30, 1977, (an additional $9,500,000 acquired by unconsolidated subsidiaries) $500,000 par value 6½% convertible preferred shares and a minor holding of common shares of Brunswick Mining and Smelting Corporation Limited. Because of the voting rights attaching to the preferred shares, Brunswick is technically a subsidiary of Noranda under the definitions of the Ontario Corporations Act. Noranda's share of the consolidated loss incurred by Brunswick since acquisition is however insignificant and has not been provided for. The interest entitlement on the income bonds is based on the unconsolidated results of Brunswick, profits of which cover the bond interest liability, and Noranda has accrued the interest on these bonds.

(f) The unconsolidated subsidiaries hold 62,400 shares of Noranda Mines Limited.

(g) The aggregate direct remuneration paid or payable by Noranda and its consolidated subsidiaries to directors and senior officers amounted to $654,882. Remuneration paid by unconsolidated subsidiaries to such persons was $20,350.

(h) Accounts of the consolidated United States subsidiaries have been translated to Canadian dollar equivalents at $1.00 U.S. to $1.08 Canadian. Fixed assets and long-term liabilities of these companies have been translated at this rate since it was not materially different from the rates prevailing at the dates the subsidiaries were acquired.

2. (a) The investments in "Associated and other companies" are not temporary investments and include shares carried at a book value of $53,415,227 which have a quoted market value of $156,818,922 at December 31, 1967. The latter amount does not necessarily represent the value of these holdings which may be more or less than that indicated by market quotations.

(b) These investments include a 50% interest in Northwood Pulp Limited. The write-down of $6,323,800 made on this investment in 1967 covers Noranda's share of the losses for the year together with the amortization of the cost of establishing the Northwood Pulp business.

3. Long-term bank loans and long-term debt (Expressed in Canadian dollars):

| | | |
|---|---|---|
| Long-term bank loans to Noranda and subsidiary companies — | | |
| 5% bank loan ($2,100,000 U.S.) repayable in equal quarterly instalments 1968-1972 | 2,268,000 | |
| 6½% bank loans due August 31, 1970 | 50,000,000 | |
| 6% bank loan ($10,100,000 U.S.) due January 31, 1971 | 10,908,000 | |
| 5⅝% bank loans ($5,800,000 U.S.) due September 15, 1972 | 6,264,000 | $69,440,000 |
| Long-term debt — | | |
| Canada Wire and Cable Company Limited and its subsidiaries: | | |
| 5⅝% sinking fund debentures maturing June 1, 1983. Sinking fund principal repayments of $250,000 are required in each of the years 1968 to 1982 inclusive, together with a final payment of $750,000 at maturity | 5,000,000 | |
| Less purchased for sinking fund requirements | 1,000,000 | |
| | 4,000,000 | |
| Other long-term debt | 176,000 | 4,176,000 |
| Northwood Mills Ltd. and its subsidiaries — | | |
| 6% debenture maturing April 14, 1976, repayable in equal annual instalments of $60,000 | 480,000 | |
| 6% debenture maturing January 15, 1977, repayable in equal annual instalments of $50,000 | 450,000 | |
| Other long-term debt | 90,000 | 1,020,000 |
| The Pacific Coast Company — | | |
| 5½% – 6½% mortgage notes ($9,753,089 U.S.) payable in monthly instalments to 1987 | | 10,533,336 |
| Norcast Manufacturing Limited — | | |
| Long-term debt | | 70,000 |
| | | 15,799,336 |
| | | $85,239,336 |

An agreement relating to U.S. long-term debt contains various restrictions on the company and its subsidiaries dealing with the maintenance of working capital and tangible net worth, and the relationship of the latter to consolidated liabilities.

4. Under the provisions of the Stock Option Plan, options on 15,075 shares were granted during the year and options on 8,035 were exercised for $288,252 cash. At December 31, 1967 options on 30,996 shares were outstanding under this plan.

5. Custom concentrate has in the past been treated completely on a toll basis. However, some of this is now being purchased by Noranda. The effect of this is to substantially increase the inventories, accounts payable, sales and cost of sales.

6. Noranda and its consolidated subsidiaries have undertaken commitments which will involve capital expenditures estimated at approximately $94,000,000 during the next three years. In addition, Noranda has guaranteed repayment of bank loans now being made to Northwood Pulp Limited, to the extent of approximately $26,000,000 U.S.

   The estimated future cost of funding past service pension obligations is $3,340,000 which will be funded and absorbed against income over 23 years.

7. The comparative figures for 1966 have been restated to conform with the 1967 presentation.

## AUDITORS' REPORT

To the Shareholders of
Noranda Mines Limited:

We have examined the consolidated balance sheet of Noranda Mines Limited and its consolidated subsidiaries as at December 31, 1967, and the consolidated statements of operations, retained earnings and source and application of funds for the year then ended. Our examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as we considered necessary in the circumstances.

In our opinion the aforementioned financial statements present fairly the financial position of the companies as at December 31, 1967 and the results of their operations and the source and application of their funds for the year then ended, in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Toronto, Canada,
February 12, 1968.

CLARKSON, GORDON & CO.,
Chartered Accountants

## METAL MARKETS

While primarily associated with base metals, it may be of interest to note that Noranda's beneficial interest in the 1967 precious metal production from its own mines and those of subsidiary and affiliated companies amounted to 408,000 ounces of gold and about 4,000,000 ounces of silver, worth $23,500,000 at current market prices.

The copper shortage eased in the first half of 1967 reflecting lower business levels in North America and Europe. However, in the U.S.A., consumers continued to build inventories in anticipation of the nation-wide copper industry strike which commenced July 15. The subsequent loss of 650,000 tons of mine production by the year end gradually tightened supplies in the United States, although inventory reductions, scrap and imports enabled fabricators to meet industry and defence requirements. Deliveries in Canada declined 36,000 tons from the unusually high level reached in 1966.

The London Metal Exchange three months' quotation continued to apply for pricing in overseas markets. During 1967 it ranged from 55¢ U.S. per pound prior to removal of the Congo export embargo in February to 43¢ in April and to 60¢ in November. The U.S. producer price remained at 38¢ U.S. per pound after increasing 2¢ in January. The Canadian domestic price was raised 2¼¢ to 47¼¢ C.F. in January and to 51¢ in November. The outlook is dominated by the continuing U.S. strike and the prospect that regular supplies and stocks will not be reestablished for several months following settlement.

Free World zinc consumption at 3,650,000 tons was down slightly in 1967 due to lower demand in the United States. Mine production expanded 7% to 4,200,000 tons, including 1,240,000 tons in Canada, up 19%. Strikes in the U.S.A. reduced metal production by approximately 95,000 tons.

The East St. Louis and Canadian prices for Prime Western zinc were lowered by ¾¢ per pound in May and a further ¼¢ in June to 13½¢ U.S. and 13½¢ C.F., respectively. The overseas producer price basis was also reduced ½¢ in June to the equivalent of 12¼¢ U.S. Through production adjustments, the industry is maintaining metal stocks at reasonable levels.

Free World lead production was slightly up from 1966 and approximately balanced consumption. Prices in the U.S.A. and Canada remained at 14¢ per pound and, overseas, ranged from the equivalent of 11.0¢ to 9.8¢ U.S. per pound.

With production of 115 million pounds compared to consumption of 110 million pounds, sufficient molybdenum in all forms was available throughout the year. Annual production capacity, which had increased to 138 million pounds at year end, will ensure adequate supplies forward.

In May, the U.S. Treasury restricted silver sales at $1.293 U.S. per troy ounce to domestic users and prices in London rose above $1.60. When the Treasury withdrew its price of $1.293 in July, the U.S. price moved in line with London above $2.00 with a peak of $2.17 in November. Industrial consumption in the Free World continues to exceed new production by about 125 million ounces annually.

# LOCATIONS OF FACILITIES

N CANADA & U.S.A.*


NORANDA
QUEMONT
QUE. IRON FOUNDRIES
MATTAGAMI
ORCHAN
QUE. IRON FOUNDRIES
GASPÉ COPPER
BRUNSWICK MINING & SMELTING
EAST COAST SMELTING
BELLEDUNE FERTILIZER
ATLANTIC FOUNDRIES
PAMOUR
HALLNOR
AUNOR
GECO
NORMETAL
KERR ADDISON
CAN. WIRE & CABLE
CAN. COPPER REFINERS
NORANDA COPPER MILLS
WIRE ROPE IND.
CAN. WIRE & CABLE
RESEARCH CENTRE
WIRE ROPE IND.
CAN. WIRE & CABLE
GRANDVIEW IND.
NORANDA COPPER MILLS
FERGUS CABLES
COULTER MFG.
CAN. ELECTROLYTIC ZINC
ST. LAWRENCE FERTILIZERS
GENERAL SMELTING
NORCAST MFG.
CAN. WIRE & CABLE
PACIFIC COAST
New Madrid, Mo.

## RESULTS OF PRINCIPAL UNCONSOLIDATED SUBSIDIARY AND AS

| | | Revenue From Production | Investment and Other Income | Emergency Gold Mining Assistance | Operating and Administration Expense | Depreciation and Other Write-Offs | Income and Production Taxes |
|---|---|---|---|---|---|---|---|
| AUNOR GOLD MINES | 1967 | $ 3,053,721 | $ 239,004 | $770,216 | $ 3,448,423 | $ 177,355 | $ 41,361 |
| | 1966 | 3,004,523 | 214,297 | 634,048 | 3,140,967 | 169,431 | 108,889 |
| EMPRESA FLUORSPAR MINES (U.S. Currency) | 1967 | 2,010,286 (1) | 9,682 | — | 1,159,066 | 109,097 | 204,580 |
| | 1966 | 1,648,707 | 10,853 | — | 1,047,687 | 153,539 | 106,690 |
| EMPRESA MINERA de EL SETENTRION (U.S. Currency) | 1967 | 2,367,009 | 63,769 | — | 1,845,152 | 77,009 | 201,613 |
| | 1966 | 2,171,795 | 28,133 | — | 1,724,562 | 61,672 | 176,392 |
| GASPÉ COPPER MINES | 1967 | 32,568,161 (2) | 899,550 | — | 14,299,637 | 622,255 | 8,259,243 |
| | 1966 | 29,918,229 | 1,010,505 | — | 12,286,147 | 2,392,178 | 7,179,361 |
| HALLNOR MINES | 1967 | 1,925,992 | 322,899 | 324,458 | 2,077,029 | 37,615 | 26,625 |
| | 1966 | 1,896,877 | 290,738 | 236,221 | 1,690,553 | 148,904 | 140,557 |
| KERR ADDISON MINES | 1967 | 7,541,108 | 2,065,474 | 500,000 | 6,225,820 | 884,650 | 72,373 |
| | 1966 | 7,124,161 | 1,833,937 | 598,000 | 5,995,697 | 816,377 | 53,270 |
| NORMETAL MINING CORPORATION | 1967 | 7,488,413 | 453,632 | — | 4,828,387 | 261,309 | 1,057,945 |
| | 1966 | 7,308,373 | 414,695 | — | 4,410,824 | 394,489 | 1,030,749 |
| ORCHAN MINES | 1967 | 11,678,199 (2) | — | — | 5,337,377 (3) | 2,588,936 | 400,380 |
| | 1966 | 11,175,127 | — | — | 5,159,308 | 2,368,475 | 410,627 |
| PAMOUR PORCUPINE MINES | 1967 | 2,436,593 | 347,510 | 659,485 | 2,948,168 | 52,862 | 1,000 |
| | 1966 | 2,444,218 | 383,742 | 600,944 | 2,737,714 | 46,546 | 12,260 |
| QUEMONT MINING CORPORATION | 1967 | 7,254,661 | 766,651 | — | 5,149,662 | 252,081 | 939,575 |
| | 1966 | 8,737,710 | 673,104 | — | 5,531,657 | 364,909 | 1,370,082 |

NOTES:
(1) Net revenue from sales f.o.b. mine.
(2) Includes custom tolls.
(3) Includes interest on debentures.
(4) On preferred shares.
(5) Effective interest through direct and indirect investment.

## OCIATED MINING COMPANIES

| Net Profit | Dividends | Working Capital | Noranda's Interest Direct | Noranda's Interest Beneficial (5) | Direct Interest In Net Profit | Direct Interest In Dividends | Direct Interest In Capital and Retained Earnings | 1967 Dividends Received per Noranda Share |
|---|---|---|---|---|---|---|---|---|
| $ 395,802 | $ 400,000 | $ 4,475,519 | 55% | 55% | $ 217,691 | $ 220,000 | $ 3,648,261 | $0.02 |
| 433,581 | 400,000 | 3,760,165 | | | | | | |
| 547,225 | 36,630 | 2,404,762 | 75 | 90 | 410,419 | 27,472 | 1,977,646 | — |
| 351,644 | (4) 42,735 | 1,960,125 | | | | | | |
| 307,004 | 600,000 | 1,234,776 | 61 | 61 | 187,272 | 366,000 | 3,106,914 | 0.03 |
| 237,302 | 100,000 | 903,684 | | | | | | |
| 10,286,576 | 6,360,000 | 14,841,209 | 98 | 98 | 10,080,844 | 6,232,800 | 36,831,048 | 0.52 |
| 9,071,048 | 4,770,000 | 22,693,037 | | | | | | |
| 432,080 | 320,000 | 798,213 | 96 | 96 | 414,797 | 307,200 | 6,499,408 | 0.03 |
| 443,822 | 320,000 | 3,358,423 | | | | | | |
| 2,923,739 | 2,844,711 | 11,745,326 | 32 | 40 | 935,596 | 910,308 | 11,177,920 | 0.08 |
| 2,690,754 | 2,825,421 | 11,886,761 | | | | | | |
| 1,794,404 | 1,502,805 | 5,122,593 | 49 | 49 | 879,258 | 736,374 | 4,889,228 | 0.06 |
| 1,887,006 | 1,502,805 | 5,533,166 | | | | | | |
| 3,351,506 | — | 382,606 | 45 | 51 | 1,508,178 | — | 6,471,477 | — |
| 3,236,717 | — | 3,099,975 | | | | | | |
| 441,558 | 500,000 | 499,969 | 46 | 46 | 203,117 | 230,000 | 2,581,831 | 0.02 |
| 632,384 | 550,000 | 523,092 | | | | | | |
| 1,679,994 | 1,450,496 | 9,452,357 | 49 | 51 | 823,197 | 710,743 | 8,929,919 | 0.06 |
| 2,144,166 | 2,102,168 | 12,408,284 | | | | | | |

Noranda's direct interest in the undistributed 1967 earnings of the above companies together with Placer, Mattagami and Craigmont was $0.74 per share, and the beneficial interest (Note 5) in these earnings was $0.79 per share.

## MINING AND METALLURGICAL

### CONSOLIDATED COMPANIES

### HORNE MINE

The mine produced 979,000 tons of ore averaging 1.99% copper and 0.171 oz. of gold per ton and reserves of sulphide and fluxing ores were reduced by 555,000 and 126,000 tons, respectively.

Ore reserves at year end were:

| | Tons | Copper % | Gold oz./ton |
|---|---|---|---|
| Sulphide Ore | 3,276,000 | 2.44 | 0.19 |
| Horne Fluxing Ore | 185,000 | — | 0.24 |
| Joliet Fluxing Ore | 631,000 | 1.21 | — |

Due to rising costs, three items of low-grade material totalling 3,370,000 tons, which were previously included in ore reserves, have been withdrawn. While a substantial part of this marginal material will be mined, the actual tonnage will be determined by the trend of production costs and metal prices.

Of the ore mined, 855,500 tons was treated in the concentrator, with production of 138,500 tons of copper concentrate for smelting and 201,000 tons of pyrite concentrate for sale to chemical plants.

### GECO MINE

Ore mined and treated, at almost 4,000 tons per day, amounted to 1,461,000 tons and averaged 2.02% copper, 3.69% zinc and 2.02 ozs. of silver per ton. Some 101,400 tons of copper concentrate and 75,940 tons of zinc concentrate were produced.

Ore reserves showed a net increase of 840,000 tons and, at the year end, stood at 26,719,000 tons averaging 2.10% copper, 5.07% zinc and 2.20 ozs. of silver per ton.

The No. 4 shaft project, which was undertaken in 1962, was completed and, together with the related surface facilities, was in regular operation at the year end.

### ORE PRODUCTION

| | HORNE MINE | | | GECO MINE | | | |
|---|---|---|---|---|---|---|---|
| | | Metal Content | | | Metal Content | | |
| | Ore (1) (tons) | Copper (tons) | Gold (ounces) | Ore (tons) | Copper (tons) | Zinc (tons) | Silver (ounces) |
| 1967 | 978,700 | 20,020 | 132,840 | 1,460,800 | 27,810 | 40,500 | 2,193,900 |
| 1966 | 1,094,600 | 23,070 | 171,140 | 1,459,600 | 26,770 | 46,120 | 2,203,500 |
| 1965 | 1,147,700 | 24,280 | 177,980 | 1,326,400 | 24,790 | 42,880 | 2,214,600 |
| 1964 | 1,250,300 | 25,690 | 205,100 | 1,299,300 | 25,620 | 56,640 | 2,468,800 |
| 1963 | 1,235,800 | 23,080 | 198,400 | 1,281,200 | 22,950 | 59,530 | 2,437,000 |

(1) Includes direct smelting ore.

## NORANDA SMELTER

The record smelter production of 215,890 tons of anodes resulted from increased receipts of custom concentrates. The pilot plant to test the new Noranda smelting process will be completed in April.

| | Material Smelted Noranda (1) (tons) | Custom (tons) | Copper Content of Anodes Produced (tons) |
|---|---|---|---|
| 1967 | 786,200 | 807,700 | 212,400 |
| 1966 | 968,700 | 679,300 | 184,580 |
| 1965 | 1,002,300 | 722,900 | 183,420 |
| 1964 | 964,500 | 671,000 | 174,760 |
| 1963 | 1,069,900 | 524,900 | 161,460 |

(1) Ores, concentrates, flux and scrap.

## BRYNNOR MINES

### Kennedy Lake Division

The strike which began in July 1966 has not been settled but work in the open pit was resumed in March 1967 by an independent contractor. Some 326,000 tons of ore was mined by December, finishing the open-pit operation.

Concentrator operation was intermittent to meet shipping schedules and 142,000 tons of concentrate was produced. Stockpiled ore amounted to 233,000 tons at the year end and milling of this material and shipment of concentrate should be completed by mid-1968 when the Kennedy Lake operation will terminate.

As indicated previously, the underground project had become uneconomic and was abandoned.

### Boss Mountain Division

Ore mined and treated, at a rate of 1,286 tons per day, amounted to 469,000 tons averaging 0.35% molybdenum. The concentrate produced contained 3,130,000 pounds of molybdenum.

Ore reserves above the adit level were maintained at 2,475,000 tons, with average grade reduced to 0.28% molybdenum. The milling rate is being increased to offset the reduction in grade.

Consideration is being given to sinking an internal shaft for access to ore indicated by diamond drilling below the adit.

## CANADIAN COPPER REFINERS

The increase in capacity to 28,500 tons per month became available in May and production of refined copper for the year was a record 324,000 tons.

Various inadequacies in the plant became evident at the higher operating rate and required correction. A substantial rearrangement of several facilities is being made for improved efficiency, particularly in the flow and handling of materials through the process.

### Refined Metal Production

| | Copper (tons) | Silver (ounces) | Gold (ounces) |
|---|---|---|---|
| 1967 | 324,000 | 11,276,000 | 475,000 |
| 1966 | 285,000 | 10,051,000 | 527,000 |
| 1965 | 273,000 | 9,647,000 | 546,000 |
| 1964 | 270,000 | 8,873,000 | 571,000 |
| 1963 | 262,000 | 9,347,000 | 581,000 |

## UNCONSOLIDATED SUBSIDIARIES

## GASPÉ COPPER MINES

### Needle Mountain

The Needle Mountain mine produced 2,860,000 tons of ore averaging 1.12% copper, of which 1,543,000 tons came from the open pit. Waste stripping from the pit amounted to 1,037,000 tons.

Ore reserves showed a net decrease of 2,304,000 tons to 29,389,000 tons averaging 1.40% copper.

The concentrator treated 2,763,000 tons of ore and produced 105,900 tons of copper concentrate as well as molybdenum concentrate containing 489,000 pounds of molybdenum.

### Copper Mountain

The Copper Mountain open pit was made ready for ore production after removal of a total of 13,100,000 tons of waste and low-grade material. Construction of the new crushing plant and the concentrator extension to treat Copper Mountain ore was virtually complete at year end, and preliminary operation of the new facilities began in January. The capital cost of the project will be somewhat less than the $15,100,000 budget.

Copper Mountain ore reserves were unchanged at 31,038,000 tons, averaging 0.71% copper.

### Smelter

The smelter operation achieved record levels as regards tonnages of custom concentrates smelted and anodes produced.

| | Material Smelted | | Copper Content of Anodes Produced |
|---|---|---|---|
| | Gaspé (1) (tons) | Custom (tons) | (tons) |
| 1967 | 200,800 | 97,800 | 54,500 |
| 1966 | 191,700 | 75,100 | 46,980 |
| 1965 | 182,600 | 60,400 | 42,650 |
| 1964 | 194,600 | 51,400 | 43,320 |
| 1963 | 210,900 | 75,000 | 47,800 |

(1) Concentrates and flux.

## BRUNSWICK MINING AND SMELTING

Brunswick has two lead-zinc-silver mines with ore reserves in the order of 80 million tons averaging about 2.7% lead, 7% zinc and 2 ounces of silver per ton. The company mines and treats some 6,900 tons of ore per day and produces separate lead and zinc concentrates, as well as a bulk lead-zinc concentrate. The ore is refractory and recoveries in the concentrator are relatively low. The production of the bulk lead-zinc concentrate, which is not marketable as such, is a means of improving the overall recoveries.

At Belledune, Brunswick owns East Coast Smelting and Chemical Company Limited, which operates a lead-zinc smelter using the Imperial Smelting process, and Belledune Acid Limited, operating a related sulphuric acid plant. The plant of Belledune Fertilizer Limited, 50% owned by Brunswick, forms part of the complex and consumes the production of the acid plant.

The smelter installation at Belledune was designed to treat the bulk concentrate and recover refined lead, zinc, silver and several

minor constituents. Initial operation from October 1966 till April 1967 was unsuccessful and resulted in serious financial losses. Since then, fairly regular production has been achieved, but at less than capacity, and the full potential of the plant will not be realized until many revisions to plant and processes have been made. These are proceeding as quickly as possible.

Because of the accounting and other difficulties associated with the completion and auditing of accounts, it is not possible to include Brunswick's operating results in this report.

## AUNOR GOLD MINES

Some 241,000 tons of ore averaging 0.35 oz. per ton was mined and treated and 80,670 ounces of gold recovered, a performance varying only slightly from that in 1966. Mining was hampered during the first half by a shortage of stoping areas available but this situation was corrected later in the year.

Ore reserves at year end showed a marginal increase to 819,000 tons averaging 0.33 oz. of gold per ton.

## HALLNOR MINES

The mining and treatment of 132,000 tons of ore averaging 0.40 oz. per ton resulted in the recovery of 50,870 ounces of gold. Ore reserves were reduced by 87,000 tons to 199,000 tons at the year end.

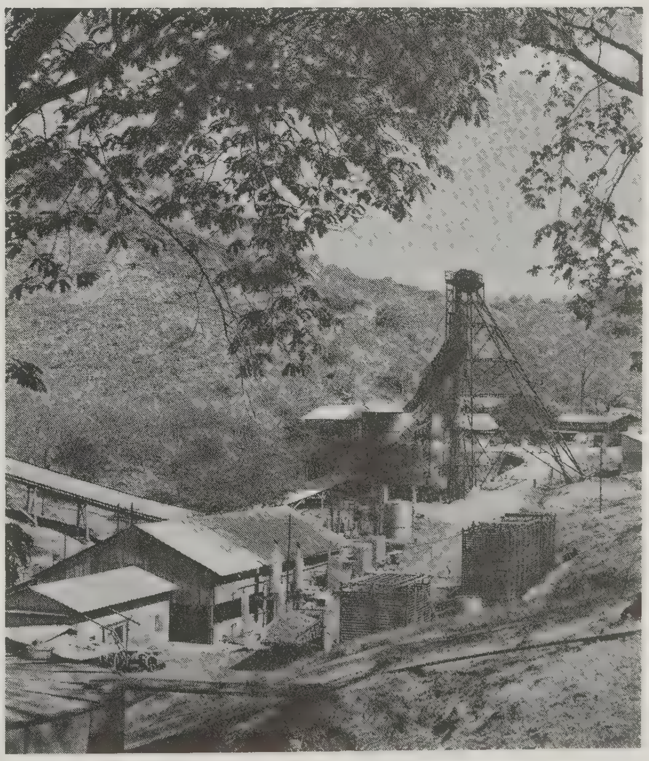
The No. 3 internal shaft was deepened 610 ft. and four new levels are being developed to explore the block from 4,300 ft. to 4,900 ft. below surface.

## EMPRESA MINERA de EL SETENTRION

The Nicaraguan mine treated 127,500 tons of ore averaging 0.54 oz. of gold per ton and recovered 64,400 ounces of gold. There was a minor net increase in proven ore reserves to 191,000 tons.

Most of the present proven and indicated ore has been developed in the new Panteon vein which has continued to open up satisfactorily. However, an inflow of hot water is increasing with depth and could become a critical problem.

The El Limon gold mine in Nicaragua, owned by Empresa Minera de El Setentrion, also treats ore from three company-operated mines about five miles distant.



## EMPRESA FLUORSPAR MINES

The operating subsidiary in Mexico had a satisfactory year with production of 195,600 tons of fluorspar and shipments of 190,000 tons. The demand was active and prices firm. Mining operations were normal and ore reserves were maintained at 2 million tons.

The Mexican company is faced with higher taxes as of January 1, 1968.

A further 240,000 of the $1 Preferred shares were redeemed, leaving outstanding 480,000 of the 1,200,000 shares issued in 1957.

Compania Minera Las Cuevas, S.A., a wholly-owned subsidiary of Empresa Fluorspar, is the world's largest single producer of metallurgical grade fluorspar, used principally as a fluxing agent in steel making.

## CHILE CANADIAN MINES

During 1967, this copper operation treated 201,500 tons of ore averaging 2% copper and recovered 5,410 tons of cement copper containing 3,475 tons of metal. The cement copper was sold to Japanese smelters.

Ore reserves at year end were 431,000 tons averaging 2.47% copper.

The total investment in this project was $4.5 million. The accumulated cash flow from 47 months' operation to December 31, 1967 was $2.2 million, of which $1 million has been repaid to Setentrion and Noranda and the remainder retained for working capital.

## ASSOCIATED COMPANIES

### KERR ADDISON MINES

A shortage of miners decreased daily tonnage to 1,417 from 1,481 in 1966, but ore grade increased to 0.394 oz. of gold per ton from 0.357 oz. The ore reserves at January 1, 1968 were 3,750,000 tons averaging 0.451 oz. per ton, sufficient for about seven years.

Joutel Copper Mines Limited, two-thirds owned by Kerr Addison, began production in February and reached full tonnage of 700 tons per day in August. The ore reserve is 1,020,000 tons averaging 2.45% copper.

Kerr Addison has a 21⅜% interest in Icon Sullivan Joint Venture which, after beginning production from its Chibougamau property in May, mined and treated 510 tons per day of ore averaging 3.4% copper.

Agnew Lake Mines Limited, 80% owned by Kerr Addison, was formed to acquire a uranium property east of the Blind River in

Ontario. Favourable results of diamond drilling on this property and an intervening Kerr Addison claim, together with good expansion potential and progressively improving uranium market forecasts, led to a decision to prepare the mine for production when market conditions warrant. A shaft is to be sunk to 3,000 feet and lateral development and underground diamond drilling carried out to detail the ore zones. The shaft and related surface plant and facilities are designed as an integral part of an eventual production plant. This initial programme is estimated to cost $9.5 million.

## NORMETAL MINING CORPORATION

Production at 955 tons of ore per day was slightly higher than in 1966. After milling 348,400 tons, ore reserves declined to 1,595,000 tons averaging 2.11% copper and 6.47% zinc.

No ore has been found below the bottom level and, if none of consequence materializes, the mine will be exhausted by the end of 1972. The present production rate should be fairly well maintained in 1968 and 1969.

## QUEMONT MINING CORPORATION

Due to the progressive decrease in available ore, only 1,216 tons per day were treated compared to 1,584 tons in 1966. If no important new ore is found, it is expected that mining will finish before the end of 1971. In view of the exhaustive exploration already carried out on the Quemont property, very little is being done at present. Ore reserves at year end were 1,100,000 tons averaging 0.94% copper, 2.46% zinc, 0.91 oz. of silver and 0.16 oz. of gold per ton.

## ORCHAN MINES

Some 375,000 tons of ore were mined by this company and treated together with 329,000 tons of custom ore from the New Hosco mine. Ore reserves were depleted by 237,000 tons to 3,074,000 tons averaging 11.0% zinc and 1.2% copper.

## NEW HOSCO MINES

Normal production of ore from the property in the Mattagami Lake area continued under management by Noranda.

## PAMOUR PORCUPINE MINES

The milling rate of 1,671 tons per day, average ore grade of 0.115 oz. per ton and gold production of 64,170 ounces, were very close to the 1966 results. Underground exploration was moderately successful and ore reserves were increased slightly to 1,634,600 tons averaging 0.11 oz. of gold per ton.

## CANADIAN ELECTROLYTIC ZINC

Production was a record 119,500 tons of slab zinc, which is 82% of rated capacity. Also produced were 121,000 tons of sulphuric acid and substantial quantities of cadmium and zinc sulphate. After having achieved very satisfactory plant operation, production has been curtailed recently because of weak zinc markets.

The associated company, St. Lawrence Fertilizers, experienced financial difficulties due to severe and continuing start-up problems, depressed fertilizer prices and a six-week strike. A proposal has been made under

which the company would be re-financed, with C.E.Z. increasing its present 25% ownership.

The operating results of General Smelting, a wholly-owned subsidiary, were satisfactory, with sales of secondary zinc and aluminum products increasing approximately 10% to 11,485 tons. The capacity of the plant has been expanded.

## OTHER IMPORTANT INTERESTS

### PLACER DEVELOPMENT

Placer had an estimated net profit of $11,714,000 in 1967, and paid dividends totalling 80¢ per share.

Marcopper Mining Corporation, in which Placer holds a 40% indirect interest, has announced plans to bring its Philippine copper property into production at 15,000 tons per day. The estimated cost of the project is $40 million.

### MATTAGAMI LAKE MINES

Net earnings of $10,926,000, or $1.65 per share, were 29.6% less than 1966 earnings of $15,528,000. No income tax was payable for 1967, but 1968 profits will be taxable in part.

An initial dividend of 25¢ per share was paid on March 22, 1967. Four dividends of 25¢ per share each, plus an extra of 25¢, were paid during the year.

At a rate of 3,874 tons per day, the mill treated 1,414,000 tons of ore averaging 10.0% zinc and 0.61% copper. The mill produced 248,350 tons of zinc concentrate and 30,740 tons of copper concentrate.

Ore reserve tonnage is 17,968,000, and average grade 10.4% zinc and 0.70% copper.

### CRAIGMONT MINES

This company had a good year, realizing net profits of $11,166,000 and paying dividends totalling $2.00 per share during the fiscal period ended October 31, 1967.

Open-pit mining was completed and future mill feed will come from underground mining and from stockpiles of low-grade ore accumulated during open-pit mining. The resulting drop in ore grade will mean lower copper production and earnings.

## EXPLORATION, DEVELOPMENT AND RESEARCH

Aggressive exploration programmes are being pushed mainly in Canada, the United States and Australia. Highly skilled staff employ the most advanced equipment and techniques in the continuing search for new ore. Some promising results are being obtained.

At the Newman property at Babine Lake in British Columbia, further engineering and design for an open pit and concentrator are deferred, pending clarification of the Federal and, more recently, the B.C. plans for mine taxation. However, diamond drilling was resumed to complete outlining of the ore.

Drilling at another property north of Babine Lake has indicated substantial tonnages of low-grade copper ore.

Preliminary exploration on other base metal properties has given encouraging results and diamond drilling is proceeding on several.

Exploration in Australia is carried out by a wholly-owned subsidiary, Noranda Australia Limited, under the direction of a resident Managing Director.

Noranda and Gaspé Copper are sharing equally a 20% interest in Northern Oil Explorers Ltd., which is conducting a $25 million, five-year oil and gas exploration programme in Canada. By the end of 1967, N.O.E.L. was off to a strong start, having acquired land to the extent of 2,700,000 net acres. As planned, the emphasis during the initial period has been on land acquisition.

Noranda will contribute $906,000 toward a three-year $20 million oil exploration programme in the Arctic Islands by Panarctic Oils Ltd. Noranda's interest in Panarctic will be 4.5%. The Arctic Islands sedimentary basin is the largest undeveloped potential oil reservoir in the world. First wells will probably be drilled late in 1968.

Both shafts at the Saskatchewan potash property successfully penetrated the Blairmore formation and tubbing was completed ahead of schedule. Both reached a depth of 2,060 ft. and, at the year end, grouting of the water-bearing beds in the underlying Devonian formation had been proceeding for some time. It has since become apparent that grouting will not be successful and the decision has been made to install tubbing as in the Blairmore, for insurance against long-term difficulty from wet shafts. Some 390 ft. of tubbing in each shaft will be involved, at considerable unforeseen cost.

Construction of the concentrator building is well started and most other buildings are completed, or nearly so. Expenditures in 1967 were $16,703,000 and the total to date, $38,549,000. The target of $81,459,000 for the project will be exceeded, mainly because of extra shaft costs, but, in part due to provisions made for ready expansion of concentrator capacity and for flexibility to change product grades to meet changing market requirements.

Application has been made for the name, Central Canada Potash, for the company which will take over the project.

Noranda's research continues to be directed towards improving metallurgical processes and products. Expenditures in 1967 totalled $1,036,000.

The superior properties of the new abrasion-resistant alloy developed for use in grinding media have now been demonstrated and it will be marketed under the trade name "Cumolloy". New processes for the gaseous deoxidation of copper are in use or under test at the Noranda smelter and at Canadian Copper Refiners.

Pilot plant installations for the Noranda continuous smelting process and for leaching of oxide ores at Gaspé are nearing completion.

## MANUFACTURING

### CONSOLIDATED COMPANIES

### CANADA WIRE AND CABLE

Although Canadian domestic business has been very competitive, sales volume was higher than in 1966. The Venezuelan and Colombian subsidiaries and the associated company in Mexico showed improvement, but the New Zealand company is still hampered by start-up problems. On a consolidated basis, profits increased over the previous year.

The Simcoe and Fort Garry plants were expanded and work began on a new Toronto warehouse. Capital expenditures during the year totalled $5 million.

### NORANDA COPPER MILLS

Profits were about the same as in 1966 despite lower sales due to low building activity. Metal prices were steadier than in 1966.

Capital expenditures amounted to $3 million. The new strip mill at Fergus, Ontario, should be completed in August and construction of a new tube re-draw mill at Bellingham, Washington, will commence this Spring.

### QUEBEC IRON FOUNDRIES

The Noranda and Mont Joli foundries had satisfactory earnings and Ocean Foundries achieved profitable operation by the end of 1967, its first full year of production. Another subsidiary, Atlantic Foundries, began production in April and was operating satisfactorily by year end.

### COULTER MANUFACTURING

Strikes and other problems in the automobile industry contributed to a disappointing year for this company. Cost control and production planning are improving the operation and a profit is forecast for 1968. Capital expenditures were $236,000.

### NORCAST MANUFACTURING

This group's results were also affected by unsettled automobile industry conditions, by nickel shortages and a lack of skilled labour. Better results are expected in 1968. The new Windsor plant is an excellent die-casting and plating facility and figures importantly in future plans.

The minority interest in this company has been acquired.

### GRANDVIEW INDUSTRIES

Manufacturing is now consolidated into plants at Weyburn, Saskatchewan, and Rexdale, Ontario. The company maintains a satisfactory position in the plastic pipe market.

### ASSOCIATED COMPANIES

### WIRE ROPE INDUSTRIES

This company, which is 40% owned, again showed increased sales and satisfactory profits despite difficult conditions in the industry.

### CANPLAS INDUSTRIES

In its first full year of operation, this 50% owned company earned a satisfactory profit in spite of intense competition and a three-month strike.

# FOREST PRODUCTS

## CONSOLIDATED COMPANY

### NORTHWOOD MILLS

Operations were satisfactory until October 4th when the sawmills were closed by a strike which still persists.

One smaller sawmill will be liquidated in 1968, when the company's operations will be concentrated in the Princeton and Penticton mills.

Lumber sales by Northwood, including 137 million feet sold for Northwood Pulp, amounted to 227 million board feet.

## ASSOCIATED COMPANY

### NORTHWOOD PULP

The early part of 1967 was still a start-up and personnel training period for the pulp mill operation which was further hampered by major equipment failures. A continuing problem was recurring interruptions of hydro power supply, seriously disrupting the pulp processing for which steady operation is vital. Operations improved slowly throughout the year but acceptable production costs had not been achieved by the year end. Production was 150,000 tons of good grade pulp and it was demonstrated that output in excess of rated capacity of 625 tons per day can be achieved.

In common with the industry, the pulp mill was closed down for several weeks for lack of markets. The same conditions will probably impose several weeks' downtime and preclude profitable operations during 1968. Although the company has acquired a reasonable position in North American and European markets, world over-supply is critical and likely to persist into 1970.

The company's sawmill operations also were difficult and unprofitable. In early 1967, production was hampered by major construction and alteration work at two of the mills and, in October, all mills were closed by a strike lasting six weeks. These problems were compounded by restricted lumber markets which reflected a low level of housing construction.

However, 1968 opened with an encouraging lumber market, fair prospects for increased house building activity and the three sawmills operating well.

Total capital expenditures by Northwood Pulp in 1967 were slightly in excess of $4 million.

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